

# PROCEEDINGS OF THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON

## SERIES C. JOURNAL OF MEETINGS

VOLUME 16.

No. 6, 1951

### WEEK-END MEETING IN MANCHESTER,

20TH-22ND JULY, 1951.

By invitation of the Council of the University of Manchester the July meeting of the Society will be held in Manchester on Saturday, 21st July, and will form part of a week-end meeting, during which the PRESIDENT, COUNCIL and SOUTHERN FELLOWS of the Society will meet the NORTHERN FELLOWS and other northern entomologists including representatives of:

The Society for British Entomology (*President*: N. D. Riley, Esq., F.R.E.S.).

Lancashire and Cheshire Entomological Society (*President*: S. Gordon Smith, Esq., F.R.E.S.).

Manchester Entomological Society (*President*: I. E. Whitehead, Esq., F.R.E.S.).

Raven Entomological and Natural History Society (*President*: Baron C. G. M. de Worms, F.R.E.S.).

Derbyshire Entomological Society (*President*: Camden Clarke, Esq., F.R.E.S.).

Entomological Section of the North Western Naturalists' Union (*Chairman*: H. Britten, Esq., A.L.S., F.R.E.S.).

Entomological Section of the Yorkshire Naturalists' Union (*Chairman*: E. G. Bayford, Esq., F.R.E.S.).

### *Accommodation.*

Excellent accommodation is available at Ashburne Hall (one of the University Halls of Residence). This will be available from Friday evening, 20th July, until after lunch on Sunday, 22nd July. The inclusive charge will be 35s. plus 5 per cent. gratuity (provided 50 or more take advantage of the facilities) and will include:

*Friday, 20th.* Dinner (approx. 7 p.m.), Evening Tea, Bed and Breakfast.

*Saturday, 21st.* Evening Tea, Bed and Breakfast.

*Sunday, 22nd.* Lunch.

Ashburne Hall is conveniently situated on a main 'bus route, and any of the following 'buses from Piccadilly, Manchester, will stop near the lodge gates : Nos. 41, 42, 50, 64 and 1.

The University buildings are situated in Oxford Road, about half-way between Piccadilly and Ashburne Hall, on the same 'bus route.

Fellows who expect to be present are asked to complete and return the enclosed form as soon as possible, and in any case not later than **10th July**, indicating whether they will be accompanied by a guest and whether they wish to take advantage of the accommodation available at Ashburne Hall. If accommodation for a guest is required, please give name in block letters and indicate sex.

#### *Transport.*

For the convenience of Fellows who will travel by train from or via London, the following details of the service are given :

<i>London</i> ( <i>Euston</i> ).		<i>Manchester</i> ( <i>London Road</i> ).	
11.45 a.m.	arrive	3.40 p.m.	
2.45 p.m.	"	6.46 p.m.	
3.45 p.m.	"	7.55 p.m.	
6.00 p.m.	"	9.40 p.m.	
<i>Manchester</i> ( <i>London Road</i> ).		<i>London</i> ( <i>Euston</i> ).	
<i>Sunday</i> 4.05 p.m.	arrive	8.15 p.m.	
5.30 p.m.	"	9.36 p.m.	
Return fare from London : 3rd Class .. 50s. ; 1st Class .. 75s.			

### **PROGRAMME.**

#### **Friday evening, 20th July.**

- 7.0 p.m (approx.) Gather at Ashburne Hall for Dinner.  
Film shows in Ashburne Hall.

#### **Saturday, 21st July.**

- 10.0 a.m. Reception by the Vice-Chancellor of the University, Sir John Stopford, M.D., F.R.S., in the Whitworth Hall of the University.
- 10.15-10.45 a.m. Coffee in Whitworth Hall (provided by the University).

#### 11.0 a.m. **ORDINARY MEETING.**

(In the Natural History Lecture Room, Department of Zoology).

### **AGENDA**

1. Confirmation of the Proceedings of the Ordinary Meeting held on 6th June, 1951.
2. Recommendations of candidates for Fellowship.
3. Announcement of election of new Fellows.
4. Additions to the Library.

## Presented.

- Beddard, Frank E. *Animal coloration*. 8vo. London. 1895. [H. J. Turner Bequest.]
- British Museum (Natural History). *Ants*. 8vo. London. 1951. [Economic Leaflet no. 9.] [The Trustees of the British Museum.]
- Busvine, James R. *Insects and hygiene*. 8vo. London. 1951. [The Publishers.]
- Cachan, P. *Les termites de Madagascar et leurs dégâts*. 8vo. Tananarive. 1950. [Institut Scientifique de Madagascar.]
- Charpentier, T. de. *Orthoptera descripta et depicta*. 4to. Lipsiae. 1841-45. [H. J. Turner Bequest.] [Wants Fasc. VIII. In original wrappers.]
- Doucet, J. *Les anophélinés de la région malgache*. 8vo. Tananarive. 1951. [Institut Scientifique de Madagascar.]
- Eimer, G. H. Theodor. *Organic evolution as the result of the inheritance of acquired characters according to the laws of organic growth*. Translated by J. T. Cunningham. 8vo. London. 1890. [H. J. Turner Bequest.]
- Fabricius, J. C. *Entomologia systematica emendata et aucta*. 4 vols. in 6. 8vo. Hafniae. 1792-94.  
 — *Supplementum*. 8vo. Hafniae. 1798.  
 — *Index alphabeticus*. 8vo. Hafniae. 1798.  
 — *Index alphabeticus in . . . Supplementum*. 8vo. Hafniae. 1799.  
 These 2 *Indices* bound together. [H. J. Turner Bequest.]
- Freyer, C. F. *Neuere Beiträge zur Schmetterlingskunde mit Abbildungen nach der Natur*. Pls. to vols. 6 and 7 only, i.e., nos. 481-700. Sm. 4to. [Augsberg. 1852, 1858.] [H. J. Turner Bequest.]
- Geer, C. de. *Des Herrn Baron Karl von Geer . . . Abhandlungen zur Geschichte der Insekten aus dem Französischen übersetzt und mit Anmerkungen herausgegeben von J. A. E. Goeze*. 1 Theil. 4to. Leipzig. 1776. [This has the original t.p. instead of one reprinted in Nürnberg in 1778, which latter seems more usual.] [H. J. Turner Bequest.]
- Herrich-Schaeffer, G. A. W. *Systematische Bearbeitung der Schmetterlinge von Europa zugleich als Text, Revision und Supplement zu Jakob Hübner's Sammlung europäischer Schmetterlinge*. Bd. II. 4to. Regensburg. 1845. [H. J. Turner Bequest.]
- Lester, H. M. O. *East African Tsetse and Trypanosomiasis Research and Reclamation Organization. Annual Report, 1950*. 4to. Nairobi. 1950. [The Director, E.A.T.T.R.R.O.]
- Lister, Martin. *Historiae animalium Angliae tres tractatus*. 8vo. Londini. 1678. [H. J. Turner Bequest.]
- Paulian, Renaud. *Insectes utiles et nuisibles de la région de Tananarive*. 8vo. Tananarive. 1950. [Institut Scientifique de Madagascar.]
- Seitz, Adalbert. *Macrolepidoptera of the world*. 16 vols. + 4 suppl. vols. (some still in progress). 4to. Stuttgart. 1906-→. [H. J. Turner Bequest.]
- Snodgrass, R. E. *Comparative studies on the head of mandibulate arthropods*. 8vo. Ithaca, N.Y. 1951. [The Author.]
- Weismann, August. *Studies in the theory of descent*. Translated and edited by R. Meldola. 8vo. London. 1882. [H. J. Turner Bequest.]



*Purchased.*

- Balachowsky, A. *Les cochenilles de France, d'Europe, du nord de l'Afrique et du bassin méditerranéen. III. Caractères généraux des cochenilles. 3re partie.* [Actualités scientifiques et industrielles no. 784.] 8vo. Paris. 1939.
- Haupt, Hermann. *Die Käfer (Coleoptera) aus der eozänen Braunkohle des Geiseltales* [Geologica 6.] 8vo. Berlin. 1950.
- Schröder, C., editor. *Die Insekten Mitteleuropas insbesondere Deutschlands.* Bde. 2 and 3. 8vo. Stuttgart. 1914.
- Verity, Roger. *Le farfalle diurne d'Italia.* Plates to Vol. 4 (Apaturidae e Nymphalidae). Fol. Firenze. 1951.
- Viette, P. *Lépidoptères rhopalocères de l'Océanie française.* [Faune de l'Empire français XIII.] 8vo. Paris. 1950.
- Wulfen, Franz Xaver von. *Descriptiones quorundam Capensium insectorum.* 4to. Erlangae. 1786.

In addition, separates were presented by Mr. P. M. Miles, Mr. J. Sneyd Taylor, United States Department of Agriculture, The Smithsonian Institution, South African Institute for Medical Research, Professor P. A. Buxton, Professor G. D. Hale Carpenter, The American Entomological Society, Miss Theresa Clay, Department of Systematic Zoology of Warsaw University, Mr. G. H. L. Dicker, Professor Hermann Weber, Mr. F. J. Manning, Dr. E. A. Cockayne, Dr. N. E. Hickin, and the Anti-Locust Research Centre.

5. Admission of Fellows.

6. Communications.

**(1) Professor G. C. Varley, M.A., Ph.D.**

**The Winter Moth and Other Defoliators of Oak.**

[ABSTRACT.]

This is a preliminary account of an ecological study of the winter moth and other members of the oak community in a group of about 25 small oak trees in Wytham Wood, Berks. The work has been started in the hope of learning something about the enormous changes in insect population which often cause widespread defoliation.

The population density of moths is estimated by trapping a sample of those which climb the trees in winter. The composition of the caterpillar population is studied on the young leaves which are eaten by many species of Geometers, Noctuids and Tortricids. Samples of caterpillars which drop to the ground when fully fed are trapped, dissected and examined for parasites. Samples of the parasites which emerge from the soil are taken in metal traps of special design. Knowing the changes each year in the numbers of moths, the numbers of adult parasites, and the percentage of parasitism caused in the caterpillars, we can estimate the different types of mortality acting both on the host and on the parasites.

This method of study gives a detailed picture of parasite specificity. Some parasites are specific because the females attack only one species. Other kinds of parasite are often found in hosts in which they cannot complete their development. One common tachinid parasite of winter moth lays its eggs on the oak leaves, where every kind of caterpillar must eat them; but the larvae die in all the common caterpillars except those of the winter moth.

Possible reasons for the abundance of the winter moth will be discussed.

**(2) Dr. J. W. L. Beament and Dr. V. B. Wigglesworth, C.B.E., F.R.S.****Respiratory Mechanisms in Insect Eggs.****[ABSTRACT.]**

The shell of the insect egg must not only provide mechanical protection for the developing embryo and protection from desiccation, but it must permit the entry of sufficient oxygen. A common principle, which was first recognized by Leuckart in 1855, is the provision of a spongy air-filled layer which lines the shell and communicates with the atmosphere through air-containing ducts of various types. Some of these structures will be described in the eggs of Hemiptera, Orthoptera, Lepidoptera and Diptera.

**ADMISSION OF FELLOWS**

Any Fellow who has not been formally admitted to the Society under Chapter XIV, Section 4 of the Bye-laws and attends the meeting on 21st July, 1951, is requested to inform the Secretary either in writing at the Society's Rooms before 19th July, or at Manchester before 11.00 a.m. on 21st July.

12.45 p.m.	Cocktails in the University Refectory.
1.0-2.0 p.m.	Lunch in the University Refectory (Price 5s.).
2.30-4.0 p.m.	Exhibition of specimens by members of Northern Entomological Societies. (Details to be issued later.)
4.0-5.0 p.m.	Tea in the University Refectory (Price 1s 6d.).
7.0 p.m.	Reception by the President of the Royal Entomological Society of London, N. D. Riley, Esq., in the Refectory of the University.
7.30 p.m.	Dinner in the University Refectory (Price 8s. 6d.). Usual speeches. (Informal dress.) (An excellent variety of vintage wines will be available from 10s. per bottle.)

**Sunday, 22nd July.**

10.30 a.m.	It is hoped that one or two cars will be available to take small parties on collecting trips.
11.0 a.m.	Visit to Manchester Museum.
11.15 a.m.— 12.30 p.m.	Short papers by Northern Entomologists in Council Chamber of Museum. The following have agreed to read papers: Dr. E. J. Popham, G. S. Kloet, Esq., W. D. Hincks, Esq. (Details to be issued later.)
1.0 p.m.	Lunch at Ashburne Hall.
2.30 p.m.— 4.0 p.m.	Visit to Manchester Museum (continued). Exhibition of collections by Entomological Department of Museum. (Visitors have time to catch the 5.30 train for London.)

**Festival of Britain and IXth International Congress of Entomology,**

**Amsterdam, 17th-24th August, 1951.**

The Council of the Society wishes to assist entomologists from overseas who may be visiting England and Holland in connection with the above events. Visiting entomologists will be invited to use the Society's rooms, but, in addition, it is hoped that some Fellows will be able to offer personal hospitality.



Fellows who are able to offer such hospitality are invited to do so through the Society, by writing to the Secretary indicating whether their offer applies to (1) a particular entomologist, (2) a person interested in a particular branch of entomology, or (3) any visiting entomologist, and to add the nature of the hospitality available.

Invitations relating to the periods immediately before or after the Amsterdam Congress are likely to be of most value to visitors.

## SEPTEMBER MEETING.

### Alteration of Arrangements.

For the benefit of overseas entomologists passing through London on their way to the Amsterdam Congress, the Council has decided to hold an Ordinary Meeting on **Wednesday, 15th August**. This will replace the meeting normally due for 5th September.

## PROCEEDINGS OF THE ORDINARY MEETING HELD ON 6TH JUNE, 1951.

Mr. N. D. Riley, President, in the Chair.

Present, 68 Fellows and 13 Visitors.

The minutes of the Ordinary Meeting held on 2nd May were confirmed and signed by the President.

The names of the following candidates for election were read for the first time: A. E. G. Best, R. Couston, E. T. Giles, M.Sc., D. Lovemore, B.Sc., P. Maggs, G. I. de Mercado, R. S. George, and J. E. Treherne, B.Sc.

For the second time (taken as read): Dr. Leonard Broadbent, Miss D. E. Griffin, and M. L. Purohit, B.Sc.

The Secretary read the names of the following newly-elected Fellows of the Society: Max Isbill, A.A.E.E., 591, Peachtree Street N.E., Atlanta, Georgia, U.S.A., and Dr. J. Candido de Melo Carvalho, M.Sc., Ph.D., Museu Nacional, Rio de Janeiro, Brazil.

Thanks were voted to donors of gifts to the Library since the last meeting.

Mr. K. G. Smith and Mr. A. B. M. Whitnall signed the Obligation Book and were admitted Fellows of the Society.

The President announced that the total Fellowship of the Society had now reached one thousand. This was received with acclamation.

The following papers, accepted for publication in the *Transactions*, were read in title:

"Insolation and ant population in the West of Scotland," by M. V. Brian and A. D. Brian.

"The anatomy and morphology of the early stages of *Culicoides nubilosus* Meigen (Diptera: CERATOPOGONIDAE)," by J. W. H. Lawson.

"The *Culex pipiens* complex," by P. F. Mattingly, L. E. Rozeboom, K. L. Knight, H. Laven, F. H. Drummond, S. R. Christophers and P. G. Shute.

Mr. G. H. Caswell exhibited teratological specimens of *Bibio varipes* Meigen (Diptera: BIBIONIDAE) and *Harpocera thoracica* (Fallen) (Hemiptera: MIRIDAE) taken in Epping Forest on 11th and 25th May respectively. He said that in the case of *B. varipes* the left wing had a large additional lobe arising from its base. This lobe was much folded and a partly successful attempt had been

made to flatten it. The right wing which had been mounted for comparison was normal as were the halteres. The specimen of *H. thoracica* had both antennae reduced to the basal segments. The legs on the right were normal; on the left they were reduced to the coxae. Arising from the prothoracic coxa was a normal antenna bearing the characteristics of the male. The normal habitat of the insect was oak and hawthorn, and this specimen was taken by sweeping grass under these trees.

Mr. D. Leston said that he himself had found *H. thoracica* on grass under oak, thus confirming Mr. Caswell's experience that this species was not strictly confined to oak.

Dr. J. L. Cloudsley-Thompson exhibited specimens of the Purse-web Spider, *Atypus affinis* Eichw. Having apologized that his exhibit was not an insect, he pointed out that it was of interest in being the only British species of the sub-order Mygalomorphae, and therefore related to the Trap-door Spiders of Southern Europe. The species was rare and extremely local. It was confined to dry, friable soils, and lived in a silken tube, the end of which projected through the soil. Insects crawling on this were dragged in and eaten, the damage to the web being repaired later. The tube was often difficult to distinguish, as particles of earth were incorporated in its structure. He said that the specimens exhibited, all immature, were obtained recently by Mr. J. H. P. Sankey and himself from a valley near Box Hill, Surrey, under logs, and no others were found in the vicinity. If removed from their tubes, the spiders would return even after an interval of several hours. It was interesting that instinctive behaviour could be as plastic as this. Presumably it was correlated with the amount of silk used in the construction of the tube.

Also shown was an adult male found near Royston, Herts, about three years ago. Adult males were rarely found, because their life was of short duration after the final moult.

Dr. H. E. Hinton read a paper on new and little-known adaptations to environments that are alternately dry and flooded, an abstract of which appeared on p. 26.

In the discussion which followed, Dr. Hinton said, in reply to an enquiry by Dr. Wigglesworth, that dried Chironomid larvae absorbed water all over the general body surface, and not through the anal papillae only.

Miss Longfield mentioned that nymphs of certain species of dragonflies were able to survive several days out of water. Although they became quite dry and motionless they revived when put back in water. She hoped that it would be possible to carry out some experiments on these insects.

Dr. Hinton remarked that many dragonfly nymphs leave the water and wander about. In these insects the mesothoracic spiracles were functional. In the case of certain mosquito eggs which could be dried and kept alive for a year, it was possible that the chorion did not prevent the larva within from being dried out completely.

Mr. Zimmerman remarked that he had himself seen the dried larvae which were the subject of Dr. Hinton's paper, and had been struck by the degree of dryness, which was not limited to the outer surface, there being, in fact, no resemblance to a living organism at all.

Dr. J. R. Busvine showed a colour film of the mosquito eradication campaign in Cyprus, an abstract of which appeared on p. 26.



In the subsequent discussion, Mr. Mattingly said it would be interesting to see how long it would be before the mosquitoes again obtained a hold in Cyprus.

Dr. Richards said that in a conversation he had had with a member of the Sardinia eradication campaign, doubt had been expressed as to the ultimate success of such schemes. Experience there had suggested that children ceased to possess a natural immunity, with consequent loss of resistance so that an epidemic might occur later, as was likely if the control measures were relaxed. He asked what success had been obtained in other countries, to which Dr. Busvine replied that the Sardinia campaign had been apparently less successful than that carried out in Cyprus, although the climate and local conditions were very similar. He suggested that the success in Cyprus was possibly in part due to the excellent control measures previously in operation (i.e., before the campaign) and to very good local co-operation. He agreed that the danger from a recurrent epidemic when natural immunity was reduced was a serious problem, but there was reason to hope that if the situation was watched, adequate preventive measures were available in the form of DDT house spraying, by means of which malaria could be to a large extent controlled.

Miss Longfield remarked that she was in Cyprus towards the end of the period of the campaign and was struck by the assiduity of the workers, and also by how little the dragonfly fauna was affected by the spraying. She enquired as to the experience with other insects. Dr. Busvine replied that the DDT used was not excessively pernicious or persistent, the oil treatment being light and superficial, and harmless to most bottom-dwelling insects.

Miss Waloff said that she herself was in Cyprus during 1950 and was impressed by the enthusiasm for this work by the workmen and others concerned. In reply to an enquiry by Mr. D. J. Lewis, Dr. Busvine said that the oil was sprayed by Flit Guns and not applied by drop bottles.

E. B. BRITTON, *Hon. Secretary.*

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The next meeting will be held on 15th August at 5.30 p.m.